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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
RONESL VICKERY M				
ART UNIT		PAPER NUMBER		
1796				
NOTIFICATION DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/827,376

Applicant(s)

TAMOTO ET AL.

Examiner

Vickey Ronesi

Art Unit

1796

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 7-26, 28-32, 47-51, 58-61 and 63-66 is/are pending in the application.
- 4a) Of the above claim(s) 1, 2, 7-25, 28-32 and 47-50 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26, 51, 58-61 and 63-66 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-949)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 1/2/08
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. The outstanding 35 USC 112, 2nd paragraph rejection is withdrawn in light of applicant's amendment filed on 11/29/2007.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.
3. The new grounds of rejection set forth below are necessitated by applicant's amendment filed on 11/29/2007. In particular, claim 26 has been amended to recite a specific organic compound with an amount satisfying $0.1 \leq (A \times B/C) \leq 20$ and claims 64-66 are new. Thus, the following action is properly made final.

Claim Objections

4. Claim 64 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 64 is dependent on claim 26, wherein claim 26 recites that the organic compound is an unsaturated polycarboxylic acid polymer or copolymer. Claim 64 attempts to further limit the polycarboxylic acid with broader embodiments which has already been narrowed down in the independent claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. Claims 26, 51, 58, 60, 61, and 63-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakao et al (US 4,559,288).

Nakao et al discloses an electrophotographic photoreceptor having an interlayer, wherein the interlayer comprises colloidal silica and/or alumina (col. 7, line 36-62); a polymer having an acid value of 10-100 having repeat units of α,β -unsaturated carboxylic acid (col 4, line 18 to col. 7, line 10), including exemplified copolymer of methacrylic acid and methylmethacrylate (col. 8, lines 47-50); and another polymer (i.e., binder) (col. 7, line 11-36); and a plurality of solvents (e.g., col. 9, lines 19-30). With respect to the presently claimed resistivity $10^{10} \Omega \cdot \text{cm}$ of the filler, it is the examiner's position that alumina and silica inherently have it since applicant also utilizes alumina and silica and a material and its properties are inseparable. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Nakao et al teaches that the amount of alumina is 30-300 parts by weight based on solids (col. 7, lines 43-44), however, it does not explicitly disclose an amount of alumina and organic compound falling within the inequality like presently claimed. Note example 1 which comprises silica (rather than claimed alumina) which provides for an amount of $A \times B/C$ of 19.0.

Given that the amount of alumina and organic as taught by Nakao et al provides for a value that overlaps with the presently claimed and further given that it exemplifies a composition (albeit with silica) that falls within the presently claimed range, it would have been obvious to one of ordinary skill in the art to utilize the amounts of alumina and organic compound to satisfy the presently claimed inequality, absent a showing of unexpected or surprising results. While Nakao et al does not explicitly disclose a process of mixing the ingredients with an alumina ball

mill, given that the presently claimed composition is disclosed it is considered that that it would have been obvious to one of ordinary skill in the art to obtain the same final product, absent a showing of criticality for the presently claimed process for Nakao et al's composition.

With respect to claims 65 and 66, it is the examiner's position that the molecular weight of the organic compound polymer is *prima facie* obvious given that it would have been obvious to one of ordinary skill in the art to utilize any suitable molecular weight of a polymer to provide for the organic compound to perform its function. Case laws holds that if there is no evidence in the record pointing to any critical significance in a claimed molecular weight then the claims are not patentable over the prior art. *In re Hoeschele*, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969). Should applicant argue criticality of molecular weight, it will be noted that applicant's examples do not indicate or suggest a critical molecular weight. Such data has little to no probative value.

6. Claims 60, 61, and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanamori et al (US 6,335,061) in view of Patzschke et al (US 6,329,020).

It is noted that the intended use of "for an outermost layer of an electrophotographic photoreceptor" has not been given patentable weight. Case law holds that "where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention, the preamble is not a claim limitation." See *Rowe v. Dror*, 112 F.3d 473, 478, 42 USPQ2d 1550, 1553 (Fed. Cir. 1997).

Kanamori et al discloses a coating composition comprising colloidal silica and/or alumina (col. 18, lines 58-62) and other fillers (col. 22, lines 49-51; col. 23, lines 31-59); a

dispersing agent such as polyacrylate (col. 23, line 64 to col. 24, line 4); a binder resin (abstract); and a plurality of solvents (e.g., Table 2, col. 29, lines 33-35).

While Kanamori et al discloses the use of a polyacrylate dispersing agent, it fails to teach the acid value of it.

Patzschke et al discloses a coating composition and teaches that polyacrylate rheological additives include preferred carboxyl group-containing polyacrylate copolymers with an acid number of 60-780 which is used to wet the metal pigments/additives (col. 13, lines 52-65).

Given that Kanamori et al is open to the addition of polyacrylate dispersing agents and further given that polyacrylates with the presently claimed acid numbers are advantageous rheological additives as taught by Patzschke, it would have been obvious to one of ordinary skill in the art to utilize a polyacrylate with the presently claimed acid number in the coating composition of Kanamori et al.

With respect to claim 61, while none of Kanamori et al or Patzschke et al explicitly discloses a process of mixing the ingredients with an alumina ball mill, given that the presently claimed composition is disclosed it is considered that that it would have been obvious to one of ordinary skill in the art to obtain the same final product, absent a showing of criticality for the presently claimed process for Kanamori et al's composition.

7. Claims 26 and 51, 58, 59, and 64-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanamori et al (US 6,335,061) in view of Patzschke et al (US 6,329,020) and Jeff's (US 5,028,482).

It is noted that the intended use of “for an outermost layer of an electrophotographic photoreceptor” has not been given patentable weight. Case law holds that “where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention, the preamble is not a claim limitation.” See *Rowe v. Dror*, 112 F.3d 473, 478, 42 USPQ2d 1550, 1553 (Fed. Cir. 1997).

Kanamori et al discloses a coating composition comprising colloidal silica and/or alumina (col. 18, lines 58-62) and other fillers (col. 22, lines 49-51; col. 23, lines 31-59); a dispersing agent such as polyacrylate (col. 23, line 64 to col. 24, line 4); a binder resin (abstract); a plurality of solvents (e.g., Table 2, col. 29, lines 33-35); and coupling agents (col. 24, line 16). Note that since Kanamori et al discloses the same fillers as presently claimed, the fillers of Kanamori et al intrinsically have the presently claimed resistivity.

While Kanamori et al discloses the use of a polyacrylate dispersing agent, it fails to teach the acid value of it.

Patzschke et al discloses a coating composition and teaches that polyacrylate rheological additives include preferred carboxyl group-containing polyacrylate copolymers with an acid number of 60-780 which is used to wet the metal pigments/additives (col. 13, lines 52-65).

Given that Kanamori et al is open to the addition of polyacrylate dispersing agents and further given that polyacrylates with the presently claimed acid numbers are advantageous rheological additives as taught by Patzschke, it would have been obvious to one of ordinary skill in the art to utilize a polyacrylate with the presently claimed acid number in the coating composition of Kanamori et al.

Even so, neither Kanamori et al nor Patzschke et al teaches the amount of polyacrylate dispersing agent relative to the amount of metal (i.e., alumina) filler or the molecular weight of the polyacrylate dispersing agent.

Jeffs discloses inorganic filler such as alumina and silica (col. 4, lines 36-44) that is dispersed with a polyacrylate dispersing agent having a number average molecular weight of not more than 10,000 which is present in an amount of 0.05-0.5 wt % based on the weight of filler (col. 5, lines 38-48). This amount provides for values which overlap with the presently claimed inequality. For example, when the dispersing agent is present in an amount of 0.5 wt % based on filler (i.e., $A = 0.005$ and $C = 1$) and an acid value of 780 (i.e., $B = 780$), $A \times B/C = 3.9$.

Given that Kanamori et al and Patzschke et al teach the use of a polyacrylate dispersing agent used to dispersed alumina and further given that Jeffs discloses the same polyacrylate dispersing agent and the typical amounts and molecular weight of such a dispersing agent, it would have been obvious to one of ordinary skill in the art to utilize the amount and molecular weight taught by Jeffs to obtain a suitable dispersing agent to disperse alumina in the composition of Kanamori et al.

While none of Kanamori et al, Patzschke et al, or Jeffs explicitly discloses a process of mixing the ingredients with an alumina ball mill, given that the presently claimed composition is disclosed it is considered that that it would have been obvious to one of ordinary skill in the art to obtain the same final product, absent a showing of criticality for the presently claimed process for Kanamori et al's composition.

Response to Arguments

8. Applicant's arguments filed 11/29/2007 have been fully considered but they are not persuasive. Specifically, applicant argues (A) that the claimed polycarboxylic acid polymer or copolymer in the claimed amount satisfying the inequality provides for enhanced dispersion stability and dispersion efficiency of the filler and (B) that the data in the application as originally filed and in the 37 CFR 1.132 Declaration filed 12/23/2005 establish criticality for the process of mixing the ingredients in an alumina ball mill in the product-by-process claim.

With respect to argument (A), given that the prior art rejections above provide for amounts of polycarboxylic acid polymer meeting the presently claimed inequality, the compositions taught by the prior art would intrinsically have the allegedly improved dispersion stability and efficiency. Furthermore, there is no comparative data showing criticality for the presently claimed inequality range. The data only shows those compositions with or without polycarboxylic acid polymer and not compositions which contain polycarboxylic acid polymer in amounts that falls outside the presently claimed inequality. Applicant's conclusory statements in the specification cannot serve to establish criticality for the inequality range.

With respect to argument (B), the data is considered to be insufficient to establish a criticality for mixing with an alumina ball mill since the data is not reasonably commensurate in scope with the present claims. While the alumina ball mill improves the dispersion of the exemplified composition containing alumina as filler and a polycarboxylic acid polymer with an acid value of 35-365 as the organic compound, there is no suggestion that all compositions encompassed by the composition limitations with any binder or a polycarboxylic acid polymer with acid values less than 35 or greater than 365 would also exhibit such improved properties

when mixed with a ball mill containing only alumina balls. Case law holds that “[i]f the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” See *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Note that claim 60 does not include product-by-process language.

Furthermore, neither the amounts of ingredients nor the type of binder is reasonably commensurate in scope with the scope of the claims. Case law holds that whether the unexpected results are the result of unexpectedly improved results or a property not taught by the prior art, the “objective evidence of nonobviousness must be commensurate in scope with the claims which the evidence is offered to support.” In other words, the showing of unexpected results must be reviewed to see if the results occur over the entire claimed range (i.e., scope). *In re Clemens*, 622 F.2d 1029, 1036, 206 USPQ 289, 296 (CCPA 1980), MPEP 716.02(d).

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vickey Ronesi whose telephone number is (571) 272-2701. The examiner can normally be reached on Monday - Friday, 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

2/26/2008
Vickey Ronesi

/V. R./
Examiner, Art Unit 1796

/VASUDEVAN S. JAGANNATHAN/
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